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METHOD PERTAINING TO PERMANENT WAVING OF HAIR.

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This invention relates generally to methods and means for curling or waving hair and more particularly to growing hair on the head when it is to be given what is ordinarily known as a permanent wave which is usually produced by dividing the hair into strands and winding each on a suitable core or curling rod, the hair being treated with a lotion of alkali content and subjected to heat, the lotion acting to soften the hair filaments while rolled up in a circular manner. While this art has grown into a large industry, nevertheless hairdressers have gradually limited their practice to applying the process only to such hair as appears to be in sufficiently good physical condition to undergo the process successfully, such limitation in their work being due to the many complaints of customers because of unsatisfactory results and actual damage to their hair, the same processes would cause certain hair to shrivel up and become brittle and harsh while certain other kinds could be waved over and over again without apparently showing any damage or inferior results from a hair-waving standpoint.

These drawbacks I have found are due to the fact that the hair filaments of different heads have different structural characteristics and that while the hair of one person will absorb liquid up to a certain percentage of the dry weight of the hair, that of another person will absorb a different percentage, and further that the hair filament of loose structure will in some cases absorb ten times the amount of liquid as will be absorbed by hair of a tighter or tenser structure and that the looser the structure of the hair filament the less likely it is to be successfully waved by the prior processes, which invariably applied a lotion of uniform alkaline strength and such as to satisfactorily wave only the hair of the tightest or tensest structure.

I have discovered that extremely loosely constructed hair and hair that has lost some of its natural qualities by bleaching and much washing may take up liquid equal fully to its own weight, while tensely built and normal hair structures take up only ten per cent of liquid under the same conditions of immersion. Indeed the liquid absorbing capacity of hair, or what I will term absorptivity, varies so greatly that out of many thousands of tested samples which I have catalogued, none in fact was found to be exactly like the other, so that my discoveries reveal the errors of the prior processes, which made no allowance for absorptivity of the hair.

I have discovered that the greater the liquid absorbing capacity of the hair, the weaker should be the alkaline lotion used thereon; thus the full strength of the lotion should be used only on hair having the lowest absorptivity while the weakest lotion should be used on hair having the highest absorptivity and in the same way the intermediate classes of hair should have their corresponding intermediate graduated strengths of lotion used thereon in accordance with their respective absorptivities.

After innumerable experiments and tests of various kinds in connection with hair filaments when treated with hot lotions particularly those containing alkaline hair-treating substance, I have succeeded in definitely formulating classes of hair dependent upon their relative absorptivities and a series of graduated strengths of lotion corresponding in number to that of the hair classes for treating the same. I have also adopted a procedure in which the previously ascertained absorptiveness of a hair specimen serves to classify it and is utilized as the criterion which determines the strength of lotion to be used in waving the hair; the number of hair classes and lotion grades being conveniently fixed say for example at ten for the practical operation of my inventions, as hereinafter more fully described.

My experiments also disclose the fact that hair having from about 10 to 20 percentage absorptivity, constitutes less than 25 percent of the public's hair, so that heretofore about 75 percent of the subjects who had their hair permanently waved by the application of over-strong lotion, which should be used only on hair of low absorptivity, had reason to complain of unsatisfactory waving, whereas by apportioning the strength of lotion to absorptiveness I now succeed in successfully waving practically all kinds and conditions of hair.

I have found that the capacity or power of the many different varieties of human hair to absorb liquid can be definitely deter-